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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/773,705	02/06/2004	Manrique J. Brenes	CIS0209US	8310

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EXAMINER	
BAKER, STEPHEN M	

ART UNIT	PAPER NUMBER
2133	

DATE MAILED: 09/28/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/773,705	BRENES ET AL.	
	Examiner	Art Unit	
	Stephen M. Baker	2133	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *22 June 2005*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-31* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-31* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *06 February 2004* is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Specification

1. The disclosure is objected to because of the following informalities:

On page 11, in lines 14-15, "parameters other than the link error alarm set threshold and hysteresis factor (e.g., link error alarm set threshold)" is logically self-inconsistent.

Paragraph 0039 indicates that an "evaluation time period" is equal to or approximates the "hysteresis factor" divided by the product of the "alarm set threshold" and the transmission "bit rate," while paragraph 0040 indicates that once the "evaluation time period" is determined, it is used to "determine and scale" the "alarms set threshold" and the "alarm clear threshold," which seems over-complicated or not explained well.

Drawings

2. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the process of "comparing (an identified) data rate to a ... data rate threshold" and the process of "performing ... detecting (of operational link error), ... determining (of an operational link error rate) and ... estimating (of real-time physical link error rate) in response to said comparison" as recited in claims 11 and 22 is not suggested by the drawings and must be shown (presuming it is an accurate description) or the feature canceled from the claims. No new matter should be entered.

3. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claims 9, 11, 20 and 22 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The limitations of claims 9 and 20, most specifically the process of "modifying (a) user-specified physical link error alarm set threshold using a hysteresis factor equal to a ratio of a user-specified physical link alarm clear threshold and said user-specified physical link alarm set threshold" is apparently not supported by the disclosure or coherently presented in the claims, although it is understood that scaling alarm thresholds based on the duration of an evaluation period, which period is responsive to the data rate determination, is mentioned.

The limitations of claims 11 and 22, most specifically the process of comparing a determined data rate to a "data rate threshold," are apparently not supported by the disclosure or coherently presented in the claims, although data rate determination and generating an error rate estimate in a manner responsive to the determined data rate are understood to be described at one point (0037-0039).

Appropriate correction is required.

Claim Rejections - 35 USC § 102

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

7. Claims 1-3, 6-8, 10, 12-14, 17-19, 21, 23-26 and 29-31 are rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent No. 5,459,731 to Brief *et al* (hereafter "Brief").

Brief discloses link error monitoring in an FDDI network. The FDDI standard specifies a maximum link error rate (LER) of $2.5x10^{-10}$ bits (column 3, lines 52-56), which serves as an "alarm set threshold" for a "real-time physical link error rate." Brief further discloses counting errors detected over an interval of T seconds and using an equation (1) to determine the LER. Errors counted include line code violations (column 4, lines 22-29), which provide an "operational link error rate" measure. Accordingly, Brief discloses a "monitoring subsystem to determine an operational link error rate of a link and to estimate a real-time physical link error rate of said link using said operational link error rate" including arrangements to detect an operational link error on said link."

Regarding claims 3, 14 and 26, Brief's error rate monitoring is performed on data transmitted between "elements" of a network and apparently operates "at least partially concurrently" with the data reception, as data reception is apparently not interrupted for such monitoring.

Regarding claims 7 and 18, FDDI data is understood to be comprise a "plurality of data sets" within which the errors are detected.

Regarding claims 8, 10, 19, 21, 23, 24 and 29, in addition to generating an alarm responsive to an "alarm set threshold", i.e. generating "an alarm signal in response to a comparison of said real-time physical link error rate and a physical link error alarm set threshold," Brief also discloses a pass threshold that serves as an "alarm clear

threshold" (column 5, lines 8-56). Brief's configuration registers (Table 1) supports a "configuration subsystem to receive data specifying said physical link error alarm set threshold."

Regarding claims 12-19 and 21, software code for supporting the functions described above is provided in Brief's appendix.

8. Claims 1-8, 10, 12-19, 21 and 23-31 are rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent No. 6,310,911 to Burke *et al* (hereafter "Burke").

Burke discloses link error monitoring in a SONET or SDH network. A specified maximum link error rate (LER) of 1E-7 or 1E-6 bits serves as an "alarm set threshold" for a "real-time physical link error rate." Burke further discloses counting errors detected over a window interval for determining the error rate. Errors counted by Burke's monitor are bit-interleaved parity (BIP) errors, which provide an "operational link error rate" measure. Accordingly, Burke discloses a "monitoring subsystem to determine an operational link error rate of a link and to estimate a real-time physical link error rate of said link using said operational link error rate" including arrangements to detect an operational link error on said link."

Regarding claims 3, 14 and 26, Burke's error rate monitoring is performed on data transmitted between "elements" of a network and apparently operates "at least partially concurrently" with the data reception, as data reception is apparently not interrupted for such monitoring.

Regarding claims 4, 5, 15, 16, 27 and 28, Burke's BIP is understood to be a form of CRC, with a generator equal to x^n+1 for an interleaving depth of n bits, as well as a "frame check sequence" for the SONET or SDH frames or multi-frames.

Regarding claims 7 and 18, SONET and SDH data is understood to be comprise a "plurality of data sets" such as cells, frames or multi-frames (table at column 12, lines 35-42) within which the errors are detected.

Regarding claims 8, 10, 19, 21, 23, 24 and 29, in addition to generating an alarm responsive to an "alarm set threshold" (column 13, line 33), i.e. generating "an alarm signal in response to a comparison of said real-time physical link error rate and a physical link error alarm set threshold," Brief also discloses a pass threshold that serves as an "alarm clear threshold" (column 13, lines 36-39). Burke's configuration registers interface (column 4, lines 41-67) supports a "configuration subsystem to receive data specifying said physical link error alarm set threshold."

Regarding claims 12-19 and 21, Burke's monitoring is apparently implemented with software.

Conclusion

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Gupta *et al*, U.S. Patent No. 5,394,145, discloses obtaining a BER estimate using CRC in an ESF mode, for a DDS (Dataphone Digital Service) link.

Baydar *et al*, U.S. Patent No. 6,049,550, discloses obtaining a BER estimate using CRC-6, framing errors or BPV's (bipolar code violations) in ESF mode, for an IDLC (Integrated Digital Loop Carrier) link.

Starr, U.S. Patent No. 6,067,646, discloses obtaining a BER estimate using CRC, for an ADSL link.

Starr *et al*, U.S. Patent No. 6,307,899, discloses obtaining a BER estimate using CRC, for a DSL link.

Yang, U.S. Patent No. 6,427,219, discloses correcting multiple bit errors using CRC, for a wireless link.

Brede *et al*, U.S. Patent No. 6,603,832, discloses obtaining a BER estimate using parity errors, for a cable link.

Heath *et al*, U.S. Patent No. 6,850,498, discloses obtaining a BER estimate using CRC, for a wireless link.

Alessi *et al*, U.S. Patent No. 7,058,027, discloses obtaining a BER estimate using CRC, for an ATM network link.

Jolotta *et al*, U.S. Patent No. 7,076,274, discloses counting each CRC error as a single bit error when CRC error rates are low, for a wireless link.

Chen *et al*, U.S. Patent No. 7,106,791, discloses obtaining a BER estimate using pilot symbols instead of CRC, for a wireless link.

Suzuki, U.S. Patent No. 7,106,965, discloses obtaining a BER estimate using CRC, for a WDM optical link.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Stephen M. Baker whose telephone number is (571) 272-3814. The examiner can normally be reached on Monday-Friday (11:00 AM - 7:30 PM).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Albert DeCady can be reached on (571) 272-3819. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Stephen M. Baker
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Art Unit 2133

smb